

## PENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents  
 United States Patent and Trademark  
 Office  
 Box PCT  
 Washington, D.C.20231  
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 11 September 2000 (11.09.00)
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International application No. PCT/GB99/04142	Applicant's or agent's file reference P.6107 WOP
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International filing date (day/month/year) 14 December 1999 (14.12.99)	Priority date (day/month/year) 15 December 1998 (15.12.98)
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Applicant CURTIS, Mervyn, Stanley et al
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1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

28 July 2000 (28.07.00)

in a notice effecting later election filed with the International Bureau on:

\_\_\_\_\_

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

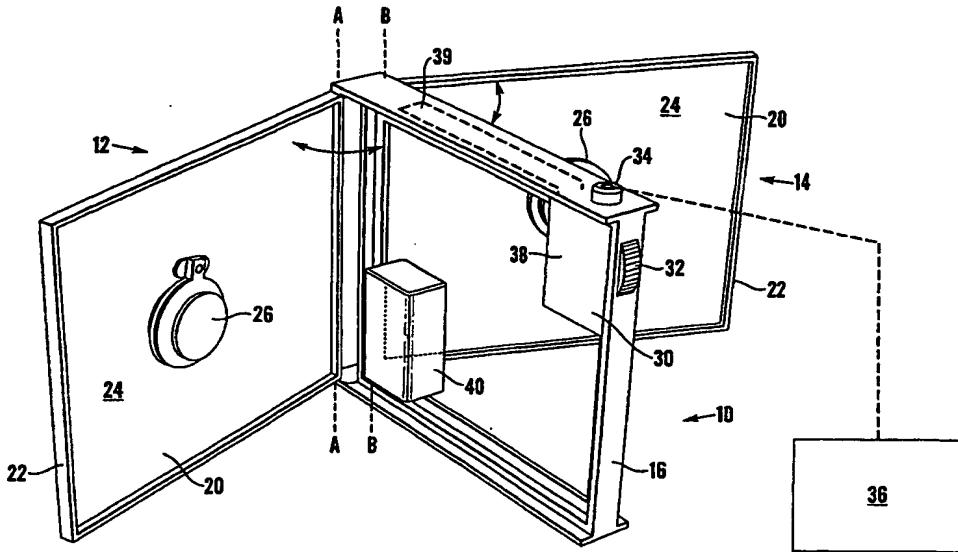
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer I. Britel  Telephone No.: (41-22) 338.83.38
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**PCT**INTERNATIONAL INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 :	A2	(11) International Publication Number:	<b>WO 00/36875</b>
H04R 5/00		(43) International Publication Date:	22 June 2000 (22.06.00)
(21) International Application Number:	PCT/GB99/04142		
(22) International Filing Date:	14 December 1999 (14.12.99)		
(30) Priority Data:	9827537.3                    15 December 1998 (15.12.98)            GB		
(71) Applicant (for all designated States except US):	WHARFEDALE INTERNATIONAL LIMITED [GB/GB]; I.A.G. House, Ermine Business Park, Huntingdon, Cambridgeshire PE18 6WA (GB).		
(72) Inventors; and			
(75) Inventors/Applicants (for US only):	CURTIS, Mervyn, Stanley [GB/GB]; Woodside, 23 North Road, St. Ives, Cambridgeshire PE17 4PR (GB). LONGBOTTOM, Simon, Andrew [GB/GB]; 76 Dart Close, St. Ives, Cambridgeshire PE17 6JB (GB). MCKAY, Justin, Lee [GB/GB]; 108 Mill Road, Royston, Hertfordshire SG8 7AJ (GB).		
(74) Agent:	EVENS, Paul, Jonathan; Maguire Boss, 5 Crown Street, St. Ives, Cambridgeshire PE17 4EB (GB).		

## (54) Title: LOUDSPEAKER



## (57) Abstract

A portable loudspeaker (10) resembling a double CD case, comprises left- and right-hand lids (12, 14) pivotally coupled about parallel axes AA and BB to side walling (16). The side walling (16) forms an open box-like enclosure, with the left- and right-hand lids (12, 14) acting as the top and bottom surfaces to complete the enclosure when covering the opening at either end of the side walling (16). Each lid comprises a sound generating unit in the form of a distributed mode acoustic radiator (20). By adopting the shape of a double CD-case, the loudspeaker is more readily accepted as a portable loudspeaker by users of personal CD players. Similar considerations apply to portable loudspeakers shaped like single CD cases, audio-tape cassette cases and mini-disc cases.

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

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REC'D	26 MAR 2001
WIPO	PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70) 16

Applicant's or agent's file reference P.6107 WOP	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB99/04142	International filing date (day/month/year) 14/12/1999	Priority date (day/month/year) 15/12/1998
International Patent Classification (IPC) or national classification and IPC H04R5/00		
<p><b>Applicant</b>  <b>WHARFEDALE INTERNATIONAL LIMITED et al.</b></p>		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I    <input checked="" type="checkbox"/> Basis of the report</li> <li>II    <input type="checkbox"/> Priority</li> <li>III    <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV    <input checked="" type="checkbox"/> Lack of unity of invention</li> <li>V    <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI    <input type="checkbox"/> Certain documents cited</li> <li>VII    <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII    <input checked="" type="checkbox"/> Certain observations on the international application</li> </ul>		

Date of submission of the demand 11/07/2000	Date of completion of this report 22.03.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  De Vries, J  Telephone No. +49 89 2399 8949



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB99/04142

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).*):

**Description, pages:**

1-12                   as originally filed

**Claims, No.:**

1-27                   as originally filed

**Drawings, sheets:**

1/5-5/5               as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description,           pages:
- the claims,               Nos.:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB99/04142

- the drawings,      sheets:
5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):  
*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*
6. Additional observations, if necessary:

**IV. Lack of unity of invention**

1. In response to the invitation to restrict or pay additional fees the applicant has:
- restricted the claims.
- paid additional fees.
- paid additional fees under protest.
- neither restricted nor paid additional fees.
2.  This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- complied with.
- not complied with for the following reasons:  
**see separate sheet**
4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:
- all parts.
- the parts relating to claims Nos. .

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)                  Yes: Claims 1-12,15- 18, 22 - 27  
                                  No: Claims 13,14,19 - 21

Inventive step (IS)           Yes: Claims 1 - 12, 15 - 18, 22 - 27  
                                  No: Claims 13,14,19 - 21

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB99/04142

Industrial applicability (IA) Yes: Claims 1 - 27  
No: Claims

**2. Citations and explanations  
see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/04142

**Re Item IV**

**Lack of unity of invention**

- 1).The application lacks unity as the claims pertain to two separate inventions.
  - 2).The separate claim groups are:
    - a).Claims 1 - 12 : a portable loudspeaker comprising a sound generating unit in a housing the housing having an outer periphery in the shape of a storage device for a CD box or a tape cassette box or a mini disc box.
    - b).Claims 13 to 18 : a portable loud speaker comprising a sound generating unit mounted in or on a lid of a box enclosure of a housing , which lid can move to cover or uncover the enclosure opening and means coupled to the sound generating unit to receive signals from a personal player.
    - c).Claims 19 to 25 : a loudspeaker comprising an acoustic radiator and a transducer wherein the acoustic radiator comprises first and second regions with different stiffness.
    - d).Claims 26 and 27 : Combine the two inventions of 1 to 12 or 13 to 18 with the invention of claims 19 to 25.
  - 3a). Rule 13 (PCT) requires that the application relate to one invention only or to a group of inventions so linked as to form a single general inventive concept.
  - bi).The intended inventive concept of independent claim 1 appears to involve the combination of a portable loudspeaker with a housing having an outer periphery in the shape of a storage device.
  - ii).The concept of claim 13 appears to be that the portable loud speaker housing comprises an enclosure , which enclosure is not necessarily comparable with the storage device shaped outer periphery of claim 1. This thus forms a second concept.
  - c).The intended inventive concept of independent claim 19 pertains to a loud speaker and features of its acoustic radiator.
- This therefore has no common features and certainly no common inventive link with claims 1 to 18 such that there is a lack of unity.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/04142

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1). Claims 1 to 18**

- a).Claim 1 pertains to a portable loud speaker comprising a sound generating unit in a housing having an outer shape of a storage device selected from the group consisting of CD box, tape cassette box and minidisc box.
- b).The prior art shows
- i). in D1 : WO97 09856 a portable loud speaker arrangement which also includes a housing in the form of a CD player comprising a box type part and lid. The loud speakers may be mounted in the lid of the box type part which contains the CD player device (see page 3 line 24 to page 4 line 4).  
The difference between this and the portable loud speaker of claim 1 of the present application is that the CD player of D1 is intended to play the CD but not to store the CD.
  - ii). in D2 : EP-A- 0 412 462 a picture/sound device includes a flat screen which acts as a lid hinged thereto. The loud speaker may be arranged within the hinge arrangement. This too is a player (of video tapes and of CDS for example) and is not in the form of a storage device there for.
- c). It would therefore appear that a loud speaker arranged within a housing a storage device as claimed in claim 1 of the present application is not apparent from the prior art of the Search Report and would thus fulfill the requirements of Articles 33(2) and (3) PCT.
- d). The dependent claims 2 to 12 would also fulfill these requirements being dependent on claim 1.

**2). Claims 13 to 18**

- a). There is a lack of clarity in claim 13 due to the reference "hereinbefore defined" (see Section VIII) Thus as far as the claim may be understood , it would appear to be anticipated by the document D1 : WO9709856 which shows a box enclosure having a lid in which a loudspeaker is located (see page 3 lines 24 to 26).

Claim 13 thus appears to lack novelty in the light of D1 as far as it may be understood in the light of the lack of clarity objection.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/04142

- b). Concerning the dependent claims 14 to 18 :
- i). Claim 14 : The lid of the box in D1 is attached by a hinge .
  - ii). Claim 15 : The outer periphery of the box of D1 has the appearance of a CD player and not of a storage device from the group cited in claim 15. Thus the inclusion of this feature in claim 13 would possibly produce a novel and inventive claim which is however basically a repetition of features from claim 1 which would make it superfluous.
  - iii). Claims 16 to 18 being dependent on claim 15 would also meet the requirements of Articles 33(2) and (3) PCT.

3). Claims 19 to 25

a). Claim 19 pertains to a loudspeaker comprising an acoustic radiator and a transducer wherein the acoustic radiator comprises first and second regions with different stiffness. Attention is directed to D1 which shows a loud speaker including a radiator panel that may also include patches to damp excessive movement (see page 9 lines 2 to 12). These patches would appear to increase the stiffness of the panel in the area where it is applied, thus anticipating the features of claim 19 such that claim 19 would not appear to be novel contrary to the requirements of Article 33(2) PCT.

b). According to D1 the panel has a uniform stiffness (see description page 1 lines 20 to 28). The addition of the bitumen patches would give these individual areas a second stiffness factor.

Thus it would appear that the features of claims 20 and 21 are anticipated by the disclosure of D1 and are thus not novel (Article 33(2) PCT).

c). The radiator panel appears to have a uniform thickness according to the disclosure of D1 , neither are the specific frequencies given and thus the feature of claim 22 is not disclosed therein such that this feature in combination with claim 19 could produce a claim which fulfills the requirements of Articles 33(2) and (3) PCT.

d). Claims 23 to 25 appear to refer to specific choices of ranges which would fulfill the requirements of Articles 33(2) and (3) when dependent on claim 22 .

4). Claims 26 and 27

These claims pertain to the combination of claims 1 to 12 with claims 13 to 18. As claim 1 appears to fulfill the requirements of Articles 33(2) and (3) PCT the combination of other features therewith would also fulfill these requirements.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/04142

**Re Item VII**

**Certain defects in the international application**

- 1). The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

**Re Item VIII**

**Certain observations on the international application**

- 1). Claim 13 refers to "a portable loudspeaker for use with a personal player as hereinbefore defined ..."

This statement is not clear as it does not specify to where the "hereinbefore" applies. If it relates to the previous claims then it should refer to the claim number. Otherwise it should not refer to any specific passage in the description but be clear in itself as to its meaning.

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>P.5691</b>	FOR FURTHER ACTION		see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. <b>PCT/GB 96/02147</b>	International filing date (day/month/year) <b>02/09/1996</b>	(Earliest) Priority Date (day/month/year) <b>02/09/1995</b>	
Applicant <b>VERITY GROUP PLC et al.</b>			

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.  
 It is also accompanied by a copy of each prior art document cited in this report.

1.  Certain claims were found unsearchable (see Box I).
2.  Unity of invention is lacking (see Box II).
3.  The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
  - filed with the international application.
  - furnished by the applicant separately from the international application,
    - but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
  - Transcribed by this Authority

4. With regard to the title,  the text is approved as submitted by the applicant.  
 the text has been established by this Authority to read as follows:

A PORTABLE COMPACT DISC PLAYER INCORPORATING LOUDSPEAKERS COMPRISING  
PANEL-FORM ACOUSTIC RADIATING ELEMENTS

5. With regard to the abstract,  
 the text is approved as submitted by the applicant.  
 the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is:

Figure No. 4

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.
- None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 96/02147

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 6 H04R7/06 H04R1/02 G11B33/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
 IPC 6 H04R G11B H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 5 349 575 A (PARK) 20 September 1994 see column 2, line 27 - column 3, line 55; figures ---	1 2,3
Y A	US 3 247 925 A (WARNAKA) 26 April 1966 see column 2, line 55 - column 3, line 38; figures ---	1 2,5
A	GB 2 010 637 A (SONY CORP) 27 June 1979 see page 2, line 77 - page 3, line 78; figures ---	1,5-7
	-/-	

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the international search  19 February 1997	Date of mailing of the international search report  12.03.97
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl, Fax (+ 31-70) 340-3016	Authorized officer  Gasta Tdi, G

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 96/02147

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 92 03024 A (SECR DEFENCE BRIT) 20 February 1992 see page 5, line 4 - page 6, line 5; figures	1
A	& GB 2 262 861 A (SECR DEFENSE) 30 June 1993 cited in the application ---	1
A	PATENT ABSTRACTS OF JAPAN vol. 014, no. 259 (E-0937), 5 June 1990 & JP 02 079687 A (MURATA MFG CO LTD), 20 March 1990, see abstract -----	1

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 96/02147

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US-A-5349575	20-09-94	NONE		
US-A-3247925	26-04-66	GB-A-	1013643	
GB-A-2010637	27-06-79	AT-B-	362000	10-04-81
		CA-A-	1102444	02-06-81
		DE-A-	2850786	18-10-79
		FR-A-	2410410	22-06-79
		NL-A,B,C	7811631	29-05-79
		US-A-	4198550	15-04-80
WO-A-9203024	20-02-92	GB-A-	2246684	05-02-92
		AT-T-	117155	15-01-95
		DE-D-	69106712	23-02-95
		DE-T-	69106712	08-06-95
		EP-A-	0541646	19-05-93
		GB-A,B	2262861	30-06-93
		JP-T-	5509211	16-12-93